

Chapter 7A: Comprehensive Everglades Restoration Plan Annual Report

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SUMMARY

The Comprehensive Everglades Restoration Plan (CERP) is being implemented through a partnership between the U. S. Army Corps of Engineers and the State of Florida through the South Florida Water Management District (SFWMD or District) and the Florida Department of Environmental Protection.

During 2004 and 2005, the State recognized opportunities to expedite the restoration process by accelerating the design and construction of key components of CERP and the Everglades Long-Term Plan for Achieving Water Quality Goals (Long-Term Plan). Project planning activities have taken place, project sites have been identified and acquired, and design and construction activities are under way. State initiatives that are expediting South Florida ecosystem restoration include:

- **Acceler8.** Eight groups of projects that provide a boost to CERP and continue the state-mandated Long-Term Plan.
- **Lake Okeechobee and Estuary Recovery.** An action plan developed to help restore the ecological health of Lake Okeechobee and the St. Lucie and Caloosahatchee Estuaries, including Lake Okeechobee Fast Track projects, a series of “fast-track” design and construction projects to help provide meaningful water quality improvements.
- **Land Acquisition.** About 56 percent of the lands needed for CERP and over 99 percent of the lands needed for Acceler8 projects have been acquired or are in public ownership.

This year, the Florida legislature, with the support of Governor Charlie Crist, authorized additional initiatives that include focused funding for Lake Okeechobee, the Caloosahatchee River Watershed and the St. Lucie River Watershed. The 2007 State of Florida Watershed Restoration Legislation, also known as the Northern Everglades and Estuaries Protection Program, includes requirements for the District to prepare the following:

- Phase II Lake Okeechobee Watershed Protection Plan
- Caloosahatchee River Watershed Protection Plan
- Caloosahatchee River Watershed Research and Water Quality Monitoring Program
- St. Lucie River Watershed Protection Plan
- St. Lucie Watershed Research and Water Quality Monitoring Program

This chapter describes how restoration of the South Florida ecosystem is evolving from emphasis on CERP to include additional state restoration initiatives that are consistent with the goals of CERP.

This chapter's appendices provide the CERP Annual Report for the District's Fiscal Year 2007 (October 1, 2006 – September 30, 2007) (FY2007), as mandated by Section 373.470(7) of the Florida Statutes; a Baseline Report for the CERP Picayune Strand Hydrologic Restoration Project; and Permits Conditions Reports.

Since 2000, Florida has invested nearly two billion dollars to restore the South Florida ecosystem. Milestones achieved for restoration projects include:

- Adding to the completed Everglades Construction Project an additional 5,274 acres of stormwater treatment areas to improve the quality of water entering the Everglades. Another 12,700 acres of treatment wetlands are under construction, in addition to the approximately 40,000 acres already constructed.
- Starting construction on the 190,000 acre-feet Everglades Agricultural Area Reservoir Project.
- Financing accelerated projects through use of Certificates of Participation. The first series of certificates has been issued for the Everglades Agricultural Area Reservoir project. The District is the first agency in the nation to use this innovative financing for environmental restoration.

RESTORATION PROGRAMS AND INITIATIVES

Ecosystem restoration work in South Florida is being accomplished through a number of local, state and federal programs and initiatives, including:

- Comprehensive Everglades Restoration Plan
- Critical Restoration Projects
- Acceler8
- Kissimmee River Restoration
- Everglades Forever Act and Long-Term Plan Projects
- Lake Okeechobee Protection Plan and Lake Okeechobee and Estuary Recovery Plan
- Northern Everglades and Estuaries Protection Program

The array of programs and initiatives that have been established over the past several years to restore the south Florida ecosystem have overlapping goals, and some projects are common to more than one program or initiative. The projects and activities of the various programs and initiatives also influence one another.

These compound programs and initiatives involving multiple agencies necessitate not only well organized, multi-disciplinary teams, but inter-agency working groups and individuals who are responsible for implementing single projects or entire programs. It is essential that planning, design and construction of restoration features are fully coordinated and integrated.

The *Restoration Programs and Initiatives* section of this chapter reviews specific programs and initiatives that are significant in the overall restoration of the South Florida ecosystem.

COMPREHENSIVE EVERGLADES RESTORATION PLAN

The Central and South Florida Project (C&SF Project) began construction in the 1940s in partnership between the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD or District). The C&SF Project is an elaborate water management system providing flood protection and water supply for South Florida. The system has had unintended environmental effects [see the *2007 South Florida Environmental Report – Volume I* for a summary of these problems] on the South Florida ecosystem.

In 1992 and 1996, the U.S. Congress authorized the Central and South Florida Project Comprehensive Review Study (Restudy) to assess the measures necessary to restore the South Florida ecosystem. Accordingly, the Comprehensive Everglades Restoration Plan (CERP) was completed in 1999, and was then celebrated as a cornerstone of the Water Resources Development Act (WRDA) 2000. At its inception, nearly 70 agencies and organizations came forward to support the implementation of CERP, and the USACE and the District assumed the lead roles as the federal and local sponsor.

In light of the implementing agencies' recognition of the need to assess the progress of restoration, Programmatic Regulations (for more details on the Programmatic Regulations, visit: http://www.evergladesplan.org/pm/progr_regs.aspx) mandated the development of a comprehensive monitoring and assessment plan. The Monitoring and Assessment Plan (for more details on the Monitoring and Assessment Plan, visit: http://www.evergladesplan.org/pm/recover/recover_map.aspx) is documenting baseline environmental conditions of the South Florida ecosystem prior to the implementation of CERP, and will provide quantifiable evidence of restoration progress on a sub-regional and systemwide scale as projects are completed. Given the ecological uncertainties inherent in project design and implementation, the information provided by the Monitoring and Assessment Plan also will be critical in guiding Adaptive Management activities (for more information on Adaptive Management visit: http://www.evergladesplan.org/pm/program_docs/adaptive_mgmt.aspx) to optimize project performance and maximize restoration benefits.

CERP precursor or foundation projects, which include the Critical Restoration Projects and Modified Water Deliveries to the Everglades project, often are combined with CERP projects in discussions and implementation efforts due to their inter-related nature. They are, however, distinct from an authorization and funding standpoint, and the differences, and some common terms, are discussed below.

CERP Projects. CERP Projects are those projects detailed in the Restudy. This study was authorized by the WRDA Development Act 1992, and examined the C&SF Project to determine the feasibility of modifying it to restore the South Florida ecosystem and provide for other water-related needs of the region. This study resulted in The Final Integrated Feasibility Report and Programmatic Environmental Impact Statement, which was transmitted to Congress on July 1, 1999. The covers of the 10-volume final report were yellow, so the term “Yellow Book” is often used to refer to the document.

CERP Foundation Projects. Before the Restudy was completed and CERP authorized, a strong federal-state partnership had been established for restoration of the South Florida ecosystem. Certain so-called precursor or foundation projects were

assumed to be completed before certain CERP projects and components would (or could) be implemented. These projects are distinct from CERP projects in authorization and funding, yet are related in that they address issues in the same natural systems. These foundation projects influence and are influenced by CERP projects. Key among these foundation projects are the Critical Restoration Projects and the Modified Water Deliveries to Everglades National Park Project.

For more information on CERP projects, visit the official web site at: <http://www.evergladesplan.org/index.aspx>. For more information on Critical Restoration Projects, visit the USACE's official web site at: www.saj.usace.army.mil/projects/index.html.

CRITICAL RESTORATION PROJECTS

Critical Restoration Projects are precursors of CERP. During the planning phase of CERP projects, these projects are assumed to be completed. The 1996 WRDA authorized these projects. The Critical Restoration Projects include:

- Ten Mile Creek Water Preserve Area
- Lake Okeechobee Water Retention/Phosphorus Removal
- Lake Trafford Restoration
- Western Tamiami Trail Culverts
- Southern CREW/Imperial River Flow-way
- East Coast Canal Structures (C-4)
- Western C-11 Water Quality Treatment

Additional information on the Critical Restoration Projects is available on the USACE web site at: www.saj.usace.army.mil/projects/index.html.

ACCELER8

The State of Florida is implementing the Acceler8 Initiative for the purpose of accelerating design and construction of a number of restoration projects consistent with CERP. Acceler8 also provides a mechanism for implementing other South Florida ecosystem restoration projects, including the construction of additional Stormwater Treatment Areas (STAs), which are part of Florida's Long-Term Plan for Achieving Water Quality Goals (Long-Term Plan).

Acceler8 projects include components identified in CERP and the Long-Term Plan. The Acceler8 projects are:

- C-44 (St. Lucie Canal) Reservoir/STAs
- C-43 (Caloosahatchee River) West Reservoir
- Everglades Agricultural Area Reservoir – Phase 1 with Bolles Canal Improvements
- Everglades Agricultural Area STAs Expansion

- Water Preserve Areas: Fran Reich Preserve (formerly Site 1 Impoundment), C-9 and C-11 Impoundments, Acme Basin B and Water Conservation Areas 3A/3B Seepage Area
- Picayune Strand Restoration
- Biscayne Bay Coastal Wetlands – Phase 1
- C-111 Spreader Canal – Phase 1

Additional information on the Acceler8 Initiative is available at www.evergladesnow.org.

KISSIMMEE RIVER RESTORATION

The Kissimmee River Restoration Project is intended to reestablish over 40 square miles of floodplain wetland and reconnect 43 miles of continuous meandering river channel that were changed by the C&SF Project. The restoration project will be jointly implemented and cost-shared by the District and the USACE.

Problems, opportunities, and constraints of the Kissimmee River and Basin are significant factors in the Northern Everglades planning effort. For more information on Kissimmee River Restoration, refer to this volume's *Chapter 11: Kissimmee River Restoration and Upper Basin Initiatives*.

EVERGLADES FOREVER ACT AND LONG-TERM PLAN

The long-term Everglades water quality goal is for all discharges to the Everglades Protection Area to achieve and maintain water quality standards, including compliance with the criterion established in Rule 62-302.540, Florida Administrative Code. Improvements began in the 1980s and accelerated with passage of the Everglades Forever Act of 1994 that required implementation of the Everglades Construction Project (ECP). This included the system of STAs.

The Everglades Forever Act was amended in 2003 to reference implementation of the Long-Term Plan as the most appropriate approach to achieve the phosphorus criterion in the Everglades Protection Area. The *2008 South Florida Environmental Report – Volume I* contains a wealth of information on Everglades water quality, of note, Chapter 8 discusses the Long-Term Plan for the Everglades Protection Area from the perspective of water quality goals. There is also considerable overlap among many of the Long-Term Plan projects and other Everglades restoration efforts, including: the Everglades Stormwater Program basins (also known as non-ECP, basins) and source controls, which are covered in Chapter 4 of this volume; and Long-Term Plan projects relating to the ECP STAs are covered in Chapter 5 of this volume.

LAKE OKEECHOBEE PLANS AND INITIATIVES

The Lake Okeechobee Protection Act (LOPA) was passed by the Florida legislature in 2000 to establish a restoration and protection program for Lake Okeechobee. This program will be accomplished by achieving and maintaining compliance with water quality standards in the lake and its tributary waters. The approach is a watershed-based, phased, comprehensive and innovative protection program designed to reduce phosphorus loads and implement long-term solutions based upon the Lake Okeechobee Total Maximum Daily Load (TMDL) of total phosphorus developed by the Florida Department of Environmental Protection (FDEP).

In January 2004, the District, FDEP and Florida Department of Agriculture and Consumer Services submitted the required Lake Okeechobee Protection Plan (LOPP) to the Florida legislature.

In 2005, the state announced the Lake Okeechobee and Estuary Recovery (LOER) Plan to improve the ecological health of Lake Okeechobee and the St. Lucie and Caloosahatchee estuaries. The plan consists of a combination of capital projects and numerous interagency initiatives designed to provide measurable and meaningful improvements to water quality and water quantity in Lake Okeechobee and the St. Lucie and Caloosahatchee estuaries.

Key state agencies charged with carrying out the plan include the District, FDEP, Florida Department of Agriculture and Consumer Services, and Florida Department of Community Affairs. Initial funding has been provided for five LOER construction projects north of Lake Okeechobee, which are identified as Lake Okeechobee Fast-Track (LOFT) projects.

With the passage of the Northern Everglades and Estuaries Protection Program legislation in 2007, the original LOPP is considered Phase I. For more information on the LOPP, LOER, and LOFT projects, refer to this Volume's *Chapter 10: Lake Okeechobee – State of the Lake and Watershed*.

NORTHERN EVERGLADES AND ESTUARIES PROTECTION PROGRAM

In 2007, the Florida legislature expanded the Lake Okeechobee Protection Act to include protection and restoration of the Lake Okeechobee watershed and the Caloosahatchee and St. Lucie estuaries (see **Figure 7A-1**). At the same time, the legislature also extended the Save Our Everglades Trust Fund for 10 years, providing an additional \$2 billion of state funding for restoration through 2020. The legislation, implemented as the Northern Everglades and Estuaries Protection Program, will focus resources on restoration efforts for Lake Okeechobee and the Caloosahatchee and St. Lucie estuaries. The new law includes \$54 million for Lake Okeechobee and an additional \$40 million for the Caloosahatchee and St. Lucie rivers.

The legislation requires the District, in collaboration with the Departments of Environmental Protection and Agriculture and affected local governments, to develop a Technical Plan for Phase II of the Lake Okeechobee Watershed Construction Project by February 1, 2008, and River Watershed Protection Plans for the Caloosahatchee and St. Lucie River watersheds by January 1, 2009.

Once they are developed, these protection plans will identify the size, location, available lands and construction schedules for water storage and treatment facilities needed to improve the quality and flow of water within each watershed. The legislation also requires improved Best Management Practices for agriculture, more stringent regulations for the application of wastewater residuals in the watershed and an accelerated timeline for implementing water quality guidelines for the Caloosahatchee.

The Lake Okeechobee Watershed Construction Project Phase II Technical Plan will identify additional water quality projects to achieve Lake Okeechobee Total Maximum Daily Loads, and help manage the lake within a more ecologically desirable range. The plan also will address Lake Okeechobee's storage needs to reduce the harmful regulatory discharges to the St. Lucie and Caloosahatchee watersheds. The legislation further specifies that the Phase II Technical Plan include a Process Development and Engineering component – Adaptive Management – to finalize

the detail and design of Phase II projects and identify additional measures needed to increase the certainty that the overall objectives for improving water quality and quantity can be met.

An intense planning effort for the Lake Okeechobee Watershed Phase II Technical Plan began in FY2007 in order to meet the legislative deadline, and with the objectives of:

- Meet Lake Okeechobee Watershed Total Maximum Daily Loads (TMDLs)
- Manage Lake Okeechobee levels within an ecologically desirable range
- Manage flows to meet desirable salinity ranges for the St. Lucie and Caloosahatchee estuaries
- Identify opportunities for alternative surface water supply sources in the watershed

Baseline information was assembled and alternatives were formulated during the summer of 2007. The Draft Lake Okeechobee Watershed Phase II Technical Plan was released for public review on November 16. Public Meetings to receive comments on the plan were held on November 27 and 28, 2007. The Final Plan will be presented to the District's Governing Board in January 2008. In order to meet its mandated deadline, the Plan will be submitted to the Florida legislature on February 1, 2008.

The Northern Everglades and Estuaries Protection Program requires that each River Watershed Protection Program include a watershed protection plan, a watershed construction project, a watershed pollutant control program, and a watershed research and water quality monitoring program. The Caloosahatchee and St. Lucie river protection planning processes were kicked off during October and, as of December 2007, are investigating modeling approaches and developing management measures for plans that are due the legislature on January 1, 2009.

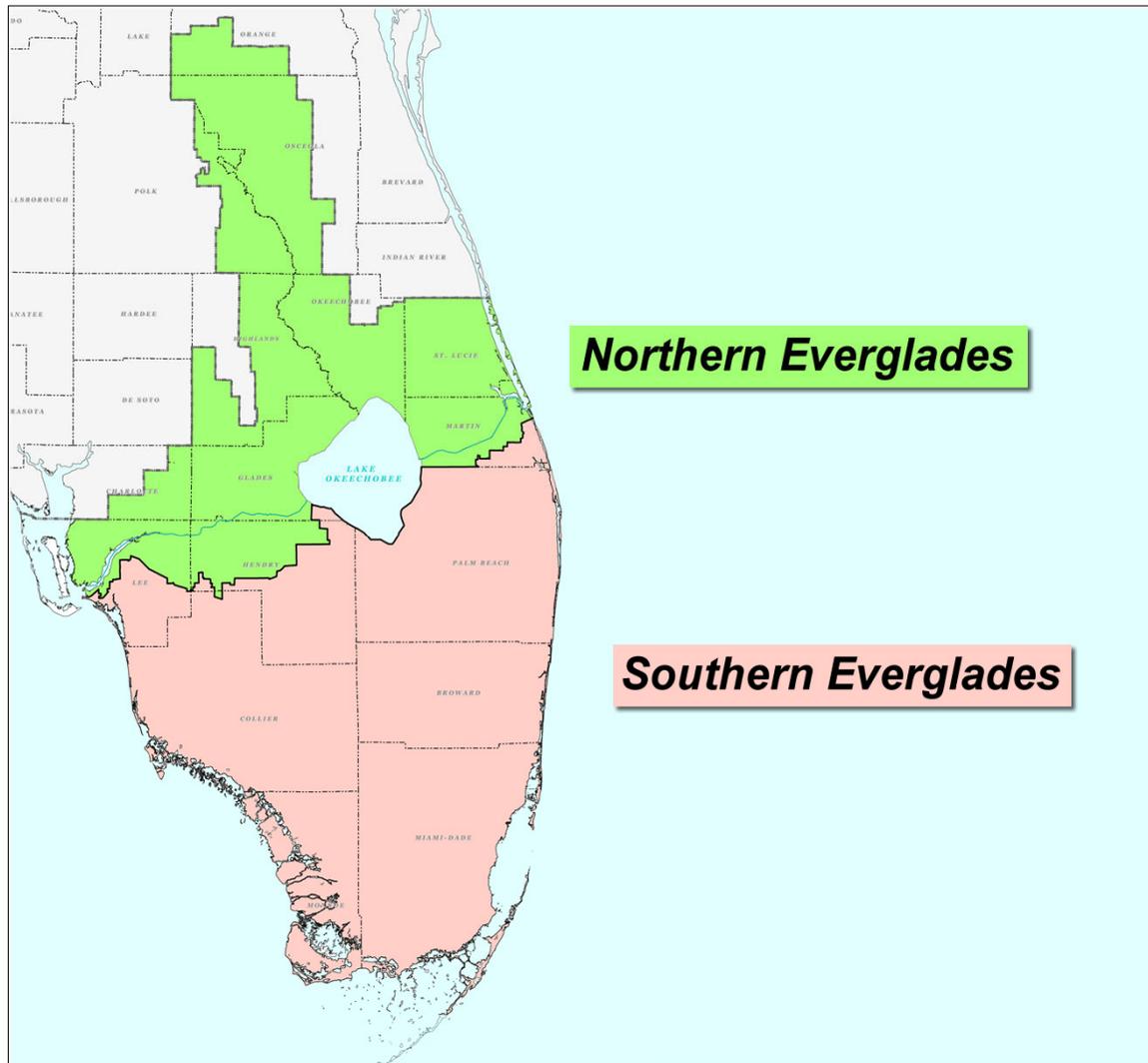


Figure 7A-1. Northern Everglades and Estuaries Protection Program planning areas.

CERP PROGRESS

OVERVIEW OF CERP PROJECTS

There are many individual components that comprise the more than 50 projects in CERP. The projects described in this section are those that have been initiated. A Master Implementation Sequencing Plan coordinates project implementation and timing to ensure maximum benefits are derived from the total mix of projects. As additional projects are launched, their respective status will be included in future reports. For a review of current CERP projects, please see **Table 7A-1**.

CERP utilizes several basic features. These project features will ensure that water is captured, stored, treated and redistributed through the natural ecosystem, restoring much of the water back into the Everglades. Each CERP project contains one or more of the following features:

- **Surface Water Storage Reservoirs (Res).** More than 181,000 acres of above- and in-ground reservoirs are planned to store billions of gallons of water.
- **Aquifer Storage and Recovery (ASR).** More than 300 underground water storage wells are envisioned in CERP.
- **Stormwater Treatment Areas (STA).** Nearly 36,000 acres of constructed wetlands will remove pollutants and other harmful contaminants from water before it is discharged to the Everglades.
- **Operational Changes (Op).** Changes will be made in the regional water management system to benefit the greater Everglades ecosystem.
- **Seepage Management (SM).** Barriers will be built to stop the rapid underground seepage of water out of the Everglades, which today results in the loss of millions of gallons of water each year.
- **Removing Barriers to Sheetflow (Rem).** More than 240 miles of canals and levees may be removed to restore the historic overland flow through the Everglades wetlands. Sections of Tamiami Trail will be elevated to handle increased water flows contributed by other CERP components.
- **Other Identified Projects (Oth).** Other projects include invasive plant (*Melaleuca*) eradication, wetlands restoration and creation (including flow-ways) and other project elements intended to increase the spatial extent of wetlands that are not associated directly with other projects.

Table 7A-1. Current CERP Projects.

Projects and Components	Project Features*							Status
	Res	ASR	STA	Op	SM	Rem	Oth	
Lake Okeechobee Watershed Region								
Lake Okeechobee ASR Pilot Project		✓						Planning: Complete Design: In Progress
Lake Okeechobee Watershed	✓		✓				✓	Planning: In Progress
Everglades Agricultural Area Storage	✓							Planning: In Progress Design: In Progress Construction: In Progress
Lower West Coast Region								
C-43 Basin Storage Reservoir – Part 1	✓	✓						Planning: Complete Design: In Progress Construction: Test Cells
Caloosahatchee (C-43) ASR Pilot Project		✓						Planning: Complete Design: In Progress
Lakes Park Restoration (Lee Cnty)							✓	Planning: In Progress
Henderson Creek / Belle Meade Restoration (FDEP)						✓		Planning: In Progress
Picayune Strand Hydrologic Restoration						✓		Planning: Complete Design: In Progress Construction: In Progress
Upper East Coast Region								
Indian River Lagoon – South Project Acceler8 Component: C-44 Reservoir and STA (Acceler8)	✓ ✓		✓ ✓				✓	Planning: Complete Design: In Progress Construction: In Progress Planning: Complete Design: Complete Construction: Test Cells
Lower East Coast Region								
Hillsboro ASR Pilot Project		✓						Planning: Complete Design: In Progress
North Palm Beach County – Part 1	✓		✓				✓	Planning: In Progress Design: In Progress Construction: In Progress
Broward County Secondary Canal System							✓	Planning: Suspended
Broward County Water Preserve Areas (WPAs)	✓		✓					Planning: Complete Design: In Progress
Acme Basin B Discharge	✓		✓					Planning: Suspended Design: In Progress Construction: In Progress

Table 7A-1. Continued.

Projects and Components	Project Features*							Status
	Res	ASR	STA	Op	SM	Rem	Oth	
Fran Reich Preserve (Site I Impoundment)	✓							Planning: Complete Design: In Progress
Strazzulla Wetlands							✓	Planning: Suspended
Biscayne Bay Coastal Wetlands						✓	✓	Planning: In Progress Design: In Progress
Winsberg Farms Wetlands Restoration (PBC)							✓	Planning: In Progress
Lake Belt In-Ground Reservoir Technology Pilot							✓	Planning: Suspended
Wastewater Reuse Technology Pilot							✓	Planning: Suspended
Everglades Region								
WCA-3 Decomp & Sheet-flow Enhancement Part 1				✓		✓		Planning: In Progress
L-30 (L-31N) Seepage Management Pilot								Planning: In Progress
Everglades National Park Seepage Management					✓			Planning: In Progress
C-111 Spreader Canal						✓		Planning: In Progress
Florida Keys Tidal Restoration							✓	Planning: Suspended
Other Projects and Studies								
Melaleuca and Other Exotic Plants Eradication							✓	Planning: In Progress
ASR Regional Study							✓	Planning: In Progress
Florida Bay / Florida Keys Feasibility Study							✓	Planning: In Progress
Southwest Florida Feasibility Study							✓	Planning: In Progress
Comprehensive Integrated Water Quality Study (DEP)							✓	Planning: In Progress
Note: One Acceler8 project, Everglades Agricultural Area Stormwater Treatment Area Expansion, does not represent a CERP component, and is not included in the table.								

* CERP Project Feature Legend:

Res	Surface Water Storage Reservoirs
ASR	Aquifer Storage and Recovery
STA	Stormwater Treatment Areas
Op	Operational Changes
SM	Seepage Management
Rem	Removing Barriers to Sheetflow
Oth	Other Identified Projects

SOUTH FLORIDA ISSUES AND UPDATES

Drought

Only two CERP foundation projects were significantly affected by regional low water levels during FY2007:

- **Lake Okeechobee Water Retention/Phosphorus Removal – Critical Restoration Project.** Start-up and testing operations were delayed indefinitely until water is once again in the system.
- **Lake Trafford Critical Restoration Project.** This project was fully shut down, and rapidly falling lake levels stranded the contractor's dredge in the very muck of the lake bottom that is to be dredged to improve water quality.

Water for the Environment

Under federal authorization and prior to initiating construction, the District must reserve, through adoption of water reservations (or otherwise legally allocate), the water for the natural system. As a requirement in the Project Implementation Report for each CERP project, the quantity of water made available by each individual project for the natural system must be identified. This identification involves a technical evaluation of habitat restoration targets, changes resulting from project operations, and quantifying water going to natural areas.

In July 2007, the District's Governing Board acted to start rulemaking to reserve the water needed for environmental protection as part of the plan to restore the Indian River Lagoon – South. This marks the first CERP project for which the District will undertake a water reservation rule-making process, a requirement of the 2000 WRDA that was also memorialized by an agreement between the governor of Florida and the president of the United States in 2002.

Concurrent with authorizing rulemaking for the Indian River Lagoon water reservation, the Board adopted a resolution to make clear that achieving environmental restoration is the priority of the State's Acceler8 Initiative. The resolution ensures that water made available by the suite of Acceler8 restoration projects will benefit first the natural system and will be consistent with CERP. Further, the resolution establishes consistency with the District's regional water availability rule that went into effect in April 2007, limiting withdrawals from the regional system for future water supply needs.

Water Resources Development Act

Almost a decade ago, the U.S. Congress set in motion history's most ambitious environmental initiative: Implementation of CERP, a plan estimated to cost \$7.8 billion with the goal of restoring South Florida's ecosystem, specifically the Everglades. Florida has lived up to its 50-50 share of the agreement, having contributed more than \$2 billion to the federal government's \$363 million to date.

In November 2007, overriding a rare veto by the president, Congress approved a \$22 billion water resources bill that contains necessary infrastructure projects, including two major wetlands restoration projects for the Everglades: the Indian River Lagoon – South Project and the Picayune Strand Hydrologic Restoration Project. The Fran Reich Preserve Project (formerly the Site 1 Impoundment) was also authorized. This water bill, however, merely authorizes the projects. It will take another act of Congress to appropriate the money.

Successful implementation of CERP relies on the expeditious appropriation of funds for authorized projects. These funds must be disbursed soon in order to sustain CERP's momentum.

CERP PROJECTS FY2007 PROGRESS

This section discusses the progress made in implementing current CERP projects. More detail on the projects, revenues and expenses, as well as unencumbered fund balances is provided in the state-mandated CERP Annual (470) Report, Appendix 7A-1 of this volume.

Planning Activities

Planning activities for CERP projects are focused on the preparation of Project Implementation Reports (PIRs). PIRs are prepared for each Everglades restoration component or group of components identified in the comprehensive plan approved by Congress in 2000. Documents include National Environmental Policy Act requirements, other state and federal assurances, project design and operational details such as hydrologic modeling, real-estate analysis, cost-benefit analyses, and alternative evaluations. PIRs are the basis for Congressional authorization and, ultimately, appropriations.

The PIR development process has taken longer than originally anticipated, however, five PIRs are now complete. Three PIRs, Indian River Lagoon South, Fran Reich Preserve (formerly the Site 1 Impoundment) and the Picayune Strand Restoration were included in the Water Resource Development Act of 2007 and were authorized in November 2007. Two other PIRs, Broward Water Preserve Areas and the C-43 Reservoir, are complete and will be sent to the House and Senate for consideration in future Water Resource Development Acts. Following is a discussion of planning activities.

Biscayne Bay Coastal Wetlands Project: The original project will be separated into two phases, each with a PIR. The first phase will redistribute existing point-source flows to Biscayne Bay over a broad front and provide more natural freshwater flow to tidal creeks along the Bay. A tentatively selected plan has been identified has been selected for the first PIR. The first PIR will address the Deering Estate Flow-way, the Cutler Wetlands Flow-way and the L-31 east culverts. The second phase will restore more coastal and freshwater wetlands when additional water becomes available for redistribution.

Broward County Water Preserve Areas: This project includes the following CERP components: Acme Basin B and Fran Reich Preserve (formerly the Site 1 Impoundment) in Palm Beach County; and Water Conservation Area 3A/3B Seepage Management Area, C-11 Impoundment and C-9 Impoundment in Broward County. The Broward County Water Preserve Areas PIR was completed in March 2007, and approved by the USACE Civil Works Review Board for final state and agency review and preparation for a Chief of Engineer's Report. In June 2007, the District's Governing Board approved the transfer of construction responsibility for this project to the USACE.

C-43 Basin Storage Reservoir Project: The PIR for the C-43 Reservoir was completed and approved by the USACE's Civil Works Review Board. The District proposes to initiate construction of the Caloosahatchee River (C-43) West Reservoir Acceler8 Project prior to congressional authorization. The project design under the Acceler8 initiative is the same as the National Environmental Protection Act preferred alternative or Recommended Plan, described in

the Draft Project Implementation Report/Environmental Impact Statement and the purposes are consistent.

C-111 Spreader Canal Project: The original project will be separated into two PIR phases to provide restoration progress while at the same time allowing the implementing agencies to address engineering and ecological uncertainties. Information gathered after the first phase of the project is completed at the time of this report will be incorporated in the design considerations for the second phase. Modeling for the C-111 Spreader Canal Phase 1 Project is nearing completion, and the team has begun evaluation and comparison of alternatives.

Everglades Agricultural Area Storage Reservoirs – Phase 1 Project: The storage reservoirs will be separated into two PIRs. The first PIR will store approximately 190,000 acre-feet of water and will optimize the use of existing STA 3/4. The second PIR will provide additional storage and may require additional new stormwater treatment capacity to handle increased flows from Lake Okeechobee to the Water Conservation Areas. The Phase 1 Reservoir Tentatively Selected Plan has been identified and is undergoing state and federal review.

Indian River Lagoon – South Project: Fulfilling a requirement of the WRDA 2000, the District's Governing Board in July 2007 directed staff to reserve the water needed for environmental protection as part of the plan to restore the Indian River Lagoon. This marks the first CERP project for which the agency will undertake a water reservation rule-making process. The Indian River Lagoon – South Project in November 2007 received Congressional authorization.

Lake Okeechobee Watershed Project: The Lake Okeechobee Watershed PIR has progressed to the point where the evaluation and selection of three final plan alternatives has been completed. This project provides significant water storage and stormwater treatment north of Lake Okeechobee.

Melaleuca Eradication and Other Exotic Plants Project: The Melaleuca Eradication and Other Exotic Plants (Bio-Controls) PIR has progressed to the final alternative analysis and the recommended plan is under review by state and federal agencies. The PIR is scheduled to be completed in FY2008.

North Palm Beach County – Part 1 Project: Extensive model development and peer-review activities have been completed for this project. The project team is reviewing alternatives and conducting cost-benefit analysis.

Picayune Strand Hydrologic Restoration Project: The final Picayune Strand Hydrologic Restoration PIR was approved by the Assistant Secretary of the Army and the Office of Management and Budget, then was delivered to the U.S. Congress and the U.S. Senate in April 2007. The Florida Panther Study Report was delivered in June 2007 to the PIR team for it to assist in Threatened and Endangered Species coordination. In November 2007, Congress authorized this project. The Picayune Strand Hydrologic Restoration Baseline Monitoring Report is in Appendix 7A-2 of this volume.

Water Conservation Area 3 Decompartmentalization & Sheetflow Enhancement – Part 1 Project: The Water Conservation Area 3 Decompartmentalization & Sheetflow Enhancement – Part 1 schedule was adjusted in April 2007 to reflect a multiple PIR approach. The three PIR approach will allow restoration progress to occur on select portions of the project while uncertainties are addressed through the use of a large-scale Adaptive Management Physical

Model (or Pilot Study). The physical model will include the construction of water conveyance structures which will allow the flow of water from Water Conservation Area 3A into Water Conservation Area 3B and Everglades National Park. Monitoring of flow and ecological changes in experimental and control areas will provide information that will be used to design future PIRs for the project.

The three Project Implementation Reports proposed for this project include:

- No.1 will cover the Miami Canal and North New River features
- No.2 then will focus on the remainder of Part 1 features: Tamiami Trail, degradation of L-29, backfilling the L-29 borrow canal and addition of more structures
- No.3 will incorporate the remaining Decpartmentalization features outlined in CERP. This includes the sequencing of Decpartmentalization with Modified Water Deliveries and other CERP projects, specifically Everglades Seepage Management and the Everglades Agricultural Area.

The plan for the Adaptive Management Physical Model is under development and state and federal agency review. This model is a large-scale, on-site, ecological field test that will guide the complex Decpartmentalization restoration design. The public comment period regarding the Decpartmentalization physical model concluded in June. The physical model will help address uncertainty and constraints in the restoration process, refine the understanding of the ecological benefits, support the selection of alternative plans, modify evaluation performance measures, and provide a better scientific understanding of how the ecosystem will respond to hydrologic change.

Design and Construction Activities

The District initiated the Acceler8 program to expedite the design and construction of several important CERP restoration projects and STAs. Design activities either have been completed, or are well under way for Acceler8. In 2007, the District accepted a proposal by the USACE to complete the design and construction of the Broward County Water Preserve Areas (C-11 and C-9 Impoundments and Water Conservation Area 3A/3B Seepage Management Area) and the Fran Reich Preserve (formerly the Site 1 Impoundment) restoration projects as a part of the federal government's share of CERP. The start of construction will be contingent on congressional authorization of the projects and subsequent appropriation of funds. Following is a discussion of progress of design and construction activities.

Indian River Lagoon – South Project: This project will capture local runoff from the C-44 basin, treat some or all of it via sedimentation and natural transformation of nutrients and return it to the C-44 canal when needed. This project will benefit flow attenuation to the St. Lucie Estuary. Improved water quality benefits will be realized from reduced loading of nutrients, pesticides, herbicides and other pollutants contained in runoff presently discharged to the estuary. This project, which also has water supply benefits, is located in southern Martin County, directly north of the C-44 canal, half-way between Lake Okeechobee and the Atlantic Ocean. The design is complete and awaiting funds to move forward to construction.

Acme Basin B Discharge Project: This project was divided into two phases as allocated to the District. Phase 1 comprised widening of the C-1 canal and addition of Pump Station 7 to move water northwards from Drainage Basin B to the C-51 canal. Phase 2 comprises the Section 24 Impoundment and Inflow Pump Station 9 to attenuate peak storm flows. Work allocated to the

Village of Wellington (Wellington) involved adjustments to flow control structures and pump stations within Drainage Basins A and B. Wellington's and the District's Phase 1 work have been completed and are being operated and maintained by the Village of Wellington.

A preliminary design has been completed for the District's Phase 2 works. This identified a potential increase in project cost. A value-engineering exercise was initiated to examine options for cost reduction. Key to the cost reduction is storage volume, which is dictated by Wellington's drainage system model. To achieve the most effective solution to complete Phase 2, the collaboration between the District and Wellington continues. A Memorandum of Agreement has been prepared and approved by the Village of Wellington Council for Wellington to design, construct, operate and maintain the Phase 2 project. District funding of up to \$21.5 million for Phase 2 was approved by the Governing Board at the December 13, 2007 meeting.

Biscayne Bay Coastal Wetlands Project: This project was divided into two phases. Phase 1 includes the design and construction of three project components under the Acceler8 program: The Deering Estate Flow-way, the Cutler Wetlands Flow-way and the L-31E culverts. In September 2006, the Preliminary Design Report for the Deering Estate Component was completed. Thereafter, in November 2006, Preliminary Design for the L-31E culverts and Cutler Wetlands Flow-way was also completed.

The project continued to move forward with the preparation of pre-final and intermediate design packages. In June 2007, the preliminary design for Deering Estate was completed, followed by the submittal of the pre-final design package on the L-31E culverts in July 2007, and the Cutler Wetlands Flow-way intermediate design package in November 2007. During the development of the design packages, the District worked closely with USACE and FDEP to obtain the 404 and 1502 permits required for the construction and implementation of this project. The Phase 2 project is in the CERP planning phase.

Broward County Water Preserve Areas Project: This project's goal is to improve Everglades water quality by diverting urban stormwater runoff into impoundments. It will improve hydropatterns in the Water Conservation Areas (WCAs), along with improving flows to the Everglades National Park, and will enhance and increase the spatial extent of wetlands adjacent to the remaining Everglades. This project also will reduce the seepage of pristine water from the WCAs into urban areas and provide a buffer between natural and developed areas. Benefits of this project include reducing the amount of excess water discharged to tide and "lost" to the system in Palm Beach and Broward counties. Furthermore, this project will provide supplemental water supply deliveries and aquifer recharge to urban areas, thus reducing demands on Lake Okeechobee and the WCAs.

C-43 Basin Storage Reservoir Project: Since the start of FY2007, the C-43 Test Cell monitoring has been completed. The test cell construction and monitoring data provided valuable information for development of the project design. The C-43 Reservoir project design is 95 percent complete. Separate District pump procurement bid documents have been completed. A manatee barrier structure design in the Townsend Canal for operation in the dry season, as requested as part of U.S. Fish and Wildlife Service's Biological Opinion, is 75 percent complete and will be incorporated into the project's final design documents.

The Final PIR was posted in the Federal Register and the formal request for FDEP's 1501 review was submitted. The project FDEP 1502 and USACE 404 permit applications have been completed and the project 1502 permit has been received. All site leases have been terminated. The Paul Parcel "exchange" providing 600 acres within the eastern reservoir footprint has been

completed; point-source contaminant remediation has been completed on 90 percent of the project land.

Picayune Strand Hydrologic Restoration Project: This project will restore and enhance over 55,000 acres of public lands by reducing over-drainage and returning natural and beneficial sheetflow of water to the project site and adjacent areas including the Fakahatchee Strand State Preserve, Florida Panther National Wildlife Refuge, Ten Thousand Island National Wildlife Refuge and Collier Seminole State Park. Restoration will benefit threatened and endangered species such as the Florida panther and the red cockaded woodpecker. The project will restore the natural flow regime to coastal estuaries and moderate large salinity fluctuations caused by the existing single-point discharge of fresh water into Faka Union Bay. It will also maintain existing flood protection for private properties and provide public access and recreational opportunities. The project includes 40 miles of canal plugging, 227 miles of road removal and the installation of three large pump stations and spreader swales.

In 2007, removal of 65 miles of roads was completed. In addition, over 160 structures and numerous trash sites have been demolished and removed. Clean up of approximately 65 acres of pesticide-contaminated soils has begun and over 25 acres have been completed. Seven miles of Prairie Canal adjacent to the road removal area have been plugged and filled. The filled area of Prairie Canal is beginning to show signs of return to pre-development conditions with the re-establishment of native plants and numerous wildlife sightings. Control of exotics within the construction footprints is also under way. This project was approved as part of the 2007 WRDA. Design is proceeding with one of the three pump stations completed and the other two due in early 2008. The design of protection features also will be completed in 2008, and construction of the project will be turned over to USACE.

Fran Reich Preserve Project: This project features an impoundment, seepage collection system, pump station, gated culvert structures and L-40 levee improvements. The Basis of Design Report has been completed as has a Final Design for a potential early start component (S-527B gated culvert). Since completion of this work, the USACE has requested that it undertake the design and construction of this project as part of its contribution to CERP. This project was therefore transferred to USACE during FY2007. Further survey and geotechnical investigations are under way.

Everglades Agricultural Storage Reservoir Project: The construction activities on the Everglades Agricultural Area A-1 Reservoir were in full swing and the first of seven construction contracts was completed during 2007. Guaranteed Maximum Price contract number 1 for the first phase of seepage canal excavation and site mobilization was essentially completed in summer 2007. The contract was completed ahead of schedule and was approximately \$10 million under the originally budgeted contract amount of \$53.7 million. This was primarily due to the dry weather conditions experienced during the year, which helped to improve productivity significantly.

Also initiated in the past year were Guaranteed Maximum Price Contracts Numbers 2 and 3. These contracts are also ahead of schedule and under budget primarily due to good weather conditions. Contract Number 2 for rock processing includes a \$112 million plant to produce 5.1 million tons of processed rock materials for dam construction. Initial plant start up began in November 2007, and is expected to continue for approximately 30 months to produce the required quantities of material. Contract Number 3 for \$94 million also was initiated to finish the remainder of the seepage canal excavation, and is expected to be completed in May 2008.

Design continues on the final earthworks and embankment and Contract Number 4 for reservoir dam construction was negotiated in November 2007 for \$350 million. The design for the remainder of the pump station and structures is expected to be completed by May 2008. Negotiations for the remaining construction contracts are expected to be completed in 2008, with construction completed in the spring of 2011.

Water Conservation Area 3A/3B Levee Seepage Management: This component of the Broward County Water Preserve Areas comprises 4,312 acres of short hydro-period wetlands heavily invaded by exotic vegetation across an area 0.6 mile wide by 11 miles long. The work includes canal widening, levees and wetland berms, water control structures, decontamination containment, and protective levee systems with seepage control pump stations, bridges, and culverts. The Draft Basis of Design Report was released in November 2006 followed by an extended period of consultation.

Public Meetings (District Water Resources Advisory Commission Issues Workshops) were held in January 2007, followed by the Water Resources Advisory Commission Meeting in April 2007 and the District's Governing Board Meeting in May 2007. Since completion of this consultation period, the USACE has requested that it undertake the design and construction of this project as part of its contribution to CERP. This project has therefore transferred to the USACE.

C-11 Impoundment: This component of the Broward County Water Preserve Areas comprises a 1,050 acre above-ground impoundment capable of holding up to 4.3 feet of water across an area 1.5 miles wide by 2.3 miles long. The work includes an 8-to-10-foot-high earthen embankment, 1,000 cubic feet per second inflow pump station, spillways, seepage collection system, 500-acre replacement mitigation area, wetland berm, and a variety of culverts and weirs. The Draft Basis of Design Report was released in November 2006, followed by an extended period of consultation.

Public Meetings (Water Resources Advisory Commission Issues Workshops) were held in January 2007, followed by the Water Resources Advisory Commission Meeting in April 2007, and the District's Governing Board Meeting in May 2007. Since completion of this consultation period, the USACE has requested that it undertake the design and construction of this project as part of its contribution to CERP. This project has therefore been transferred to the USACE. The Final Basis of Design Report is completed.

C-9 Impoundment: This component of the Broward County Water Preserve Areas comprises a 1,650 acre above-ground impoundment capable of holding up to 4.3 feet of water across an area 1.4 miles wide by 2.1 miles long. The work includes an embankment, inflow pump station, spillways, seepage collection system, pump station, and water control structure. The Draft Basis of Design Report was released in November 2006, followed by an extended period of consultation.

Public Meetings (Water Resources Advisory Commission Issues Workshops) were held in January 2007, followed by the Water Resources Advisory Commission Meeting in April 2007 and the District's Governing Board Meeting in May 2007. Since completion of this consultation period, the USACE requested that it undertake the design and construction of this project as part of its contribution to CERP. This project has therefore been transferred to the USACE. The Final Basis of Design Report has been completed.

Indian River Lagoon – South Project: Construction of restoration features at Allapattah Ranch, a component of the Indian River Lagoon – South project is under way. Construction started on the C-44 Reservoir/Stormwater Treatment Area project (Acceler8 Initiative). Construction started in October 2006, and three contracts are currently under way for site preparation and reconfiguration of existing irrigation and drainage canals. Trees were cleared from 1,590 acres.

North Palm Beach County – Part 1 Project: Construction of the G-161 structure was completed in FY2007. Construction of the L-8 Basin reservoir continued and will be completed in the next few months. Dredging of organic sediments from the C-51 canal in the vicinity of Lake Worth Lagoon continued through 2007 to prevent sediment from being discharged to the lagoon.

Appendix 7A-4 of this volume contains the 2007 Water Quality Assessment Report, which presents the results of the L-8 Reservoir monitoring program, and a determination as to whether any significant water quality degradation may have occurred when using the reservoir cells for temporary water storage.

CRITICAL RESTORATION PROJECTS FY2007 PROGRESS

Lake Okeechobee Water Retention/Phosphorus Removal Critical Restoration Project: Construction of the key components of this project, STAs at Taylor Creek and Nubbin Slough, are complete. During FY2007, the regional drought hampered start-up operations and testing at both sites.

Lake Trafford Critical Restoration Project: The District had begun Phase II dredging in the shallow littoral zone when, in April, severe drought conditions caused operations to be placed on hold. A dredge, under contract to the District to complete removal of organic muck from Lake Trafford's sandy bottom, was stranded on the lake bottom in April 2007, due to the severe drought the region experienced. Phase II was about one-third completed when work was suspended. That contract was terminated in October 2007.

To enhance recreational opportunities, a temporary off-road vehicle riding site was secured under an annual lease, which was approved by the Collier County Board of County Commissioners and the District's Governing Board in May 2007. A commissioned archeological investigation resulted in the discovery of four ancient canoes along the expanded shoreline area revealed by the drought. Work to preserve the canoes will be expedited so that dredging work may resume after lake stages rise.

Tamiami Trail Critical Restoration Project: The District completed work on culvert penetrations, guard rails, and ancillary components along the first five miles of Tamiami Trail, beginning at State Road 92 and proceeding eastward. This section of road was completely repaved and project construction was completed on time and within budget in May 2006.

The Tamiami Trail Phase I work has been incorporated into the Picayune Strand PIR. This PIR was authorized by Congress in November 2007, which opens the way for the Tamiami Trail Project Cooperation Agreement to be voided, and the Tamiami Trail Phase I to be fully eligible for cost sharing under the Picayune Strand project. Once this is done, it will be necessary to negotiate a new Project Cooperation Agreement for the Tamiami Trail Phase II. The USACE is the lead agency for Tamiami Trail Phase II.

Southern Corkscrew Regional Ecosystem Watershed/Imperial River Flow-way Critical Restoration Project: This project is approximately 80 percent complete, with construction proceeding as restoration lands are acquired. Land acquisition is on hold pending U.S. Department of the Interior review and approval of an application and grant cost-share agreement submitted by the District under which the Department of the Interior will provide matching funds for acquisition of the lands needed for this project. This project will restore historical sheetflow, reduce freshwater discharges to Estero Bay during the rainy season, reduce nutrient loading to the Imperial River and Estero Bay, and reduce flooding west of the project area.

The cost estimates for this project in combination with the other Critical Restoration Projects exceed the USACE's appropriation cap set by WRDA 1996. Land restoration activities such as backfilling drainage ditches, demolishing existing structures, removing illegal dumping, and improving wildlife habitat have progressed, however, with the assistance of the Florida Fish and Wildlife Conservation Commission.

PROGRAM-LEVEL ACTIVITY FY2007 PROGRESS

RECOVER is a part of CERP responsible for linking science and the tools of science to a set of systemwide planning, evaluation and assessment tasks. The revised CERP Systemwide Performance Measures document, released in June 2007, provides the most recent performance measure documentation sheets for CERP systemwide performance measures. Additional information on Performance Measures can be found at the following web site: http://www.evergladesplan.org/pm/recover/eval_team_perf_measures.aspx.

Adaptive Management is an iterative and deliberate process of applying principles of scientific investigation to design and implementation to better understand the ecosystem and reduce key uncertainties. CERP teams in RECOVER have created two documents which define and provide the principles of Adaptive Management, explain how and when it should be used, and provide an overall strategy for integrating Adaptive Management into CERP.

The CERP Adaptive Management Implementation Guidance Manual is being developed for use by project teams, managers and scientists working on CERP. The Guidance Manual is designed to be a more detailed companion document to the Adaptive Management Strategy. The manual will provide detailed discussion, examples, and a step-by-step approach for each of the components and processes described in the Adaptive Management Strategy. The final Adaptive Management Implementation Guidance Manual will be released during 2007.

Adaptive Management documents are available for viewing at the following web site: http://www.evergladesplan.org/pm/program_docs/adaptive_mgmt.aspx.

The Quality Assurances Systems Requirements Manual is complete. This manual provides specific guidance on quality assurance methods and procedures for CERP environmental data. To view draft Quality Assurances Systems Requirements documents with peer-review comments incorporated, visit this web site: http://www.evergladesplan.org/pm/program_docs/qasr.aspx.

RELATED REPORTS

STATE CERP 470 REPORT

This Chapter's Appendix 7A-1 contains the FY2007 CERP Annual Report as mandated by Florida Statute, which provides status and funding information for all tracked CERP projects.

STATE PERMITS CONDITIONS REPORTS

The District is required to submit annual reports to FDEP regarding:

- Discussion of project status
- Conclusions regarding project success
- Problems encountered during the reporting period
- Actions taken to address the problems encountered

For the FY2007 CERP Annual Report, Appendix 7A-3 presents the Annual 404 and 1502 Permit Reports to FDEP for:

- Prairie Canal Phase I
- Everglades Agricultural Area Seepage Canal
- C-44 Troup Indiantown Water Control District
- Picayune Strand Restoration Project Road Removal

FEDERAL GENERAL ACCOUNTING OFFICE REPORT

In July 2007, the General Accountability Office (GAO) released a report on South Florida ecosystem restoration. The report recognized the significant progress made to date, acknowledged the enormity of the program, the unique nature of the challenges faced, the multitude of stakeholders, and the requirements arising from policies and statutes.

The report concluded that implementation of the CERP restoration program, particularly initiation of construction, has not progressed as quickly as originally planned. This is balanced against the continuing challenges and increasing costs since inception of the program; noteworthy is the significant progress made on foundation projects such as the Everglades Construction Project, Kissimmee River Restoration, adoption of the comprehensive and detailed Programmatic Regulations, and expedited Acceler8 projects.

In its report, the GAO recognizes the importance of adopted interim goals for restoration. In April 2007, before the GAO completed its study, the U.S. Departments of the Army and the Interior and the State of Florida defined, and formally agreed on, interim goals for environmental restoration. A second agreement then addressed other water-related needs such as flood-damage reduction and water supply. The GAO report points out the importance of properly sequencing projects to achieve early restoration benefits. Again, even before the report was completed, a reevaluation of the adopted sequencing timeline was already in progress.

The implementing agencies share the concerns expressed in the report, that project costs have increased significantly – approximately 28 percent. The original cost estimates, developed in 1998, were based on the best available science and appropriate contingency factors, including the

environmental characteristics and anticipated scope and design of the projects. Some conditions, such as rising labor and material costs, are beyond the program's control. Given what likely is an irreversible trend, the proposed solution is to proceed to completion as quickly as possible, as construction costs may never be lower than they are now. Additional information on the GAO report on South Florida ecosystem restoration can be found on the USACE web site at www.saj.usace.army.mil/cco/docs/FinalRpt_GAO-07-520.pdf

A LOOK AHEAD

The state and the federal governments remain committed to the continued effort to restore the South Florida ecosystem. Ongoing efforts to restore the ecosystems of the region must prevent further decline and provide advancements or improvements in ecosystem health. The implementation processes must remain flexible enough to be able to adjust to any new and unforeseen challenges as all of the agencies and stakeholders work together with a diverse, dedicated team to restore the South Florida ecosystem.

RELATED WEB SITES

U.S. Army Corps of Engineers, Jacksonville District	http://www.saj.usace.army.mil/
South Florida Water Management District	http://www.sfwmd.gov
U.S. Environmental Protection Agency	http://www.epa.gov
Florida Department of Environmental Protection	http://www.dep.state.fl.us
U.S. Geological Survey	http://www.usgs.gov
U.S. Fish and Wildlife Service	http://www.fws.gov